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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Schlotzhauer, Ed. O.

Serial No.: 09/955,796

Examiner: WEST, Jeffrey R.

Filing Date: September 18, 2001

Group Art Unit: 2857

Title: A method for user variation of a measurement process

COMMISSIONER FOR PATENTS
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Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on April 21, 2006.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) **$500.00.**

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

☐	one month	$ 120.00
☐	two months	$ 450.00
☐	three months	$ 1020.00
☐	four months	$ 1590.00

☐ The extension fee has already been filled in this application.

☒ (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **50-1078** the sum of **$500.00**. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-1078** pursuant to 37 CFR 1.25.

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Respectfully submitted,

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Date: June 21, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

Ex Parte: Ed O. Schlotzhauer

Application Serial No.: 09/955,796

Filed: September 18, 2001

FOR: A Method for User Variation of a Measurement Process

Group: 2857

Examiner: Jeffrey R. West

BRIEF ON BEHALF OF APPELLANTS

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APPELLANT'S BRIEF ON APPEAL

I. Real party in interest

The undersigned, Renee' Michelle Leveque, Attorney for the Appellant(s), Ed O. Schlotzhauer, certifies the following:

The name of the real party in interest (if the party named in the caption is not the real party in interest) is Agilent Technologies, Inc., a Delaware corporation.

II. Related appeals and interferences

No appeals, interferences, or judicial proceedings are currently pending.

III. Status of claims

Pending claims 1-29 and 31-40 are rejected in the application and are being appealed here. Claim 30 is canceled without prejudice.

IV. Status of amendments

No amendments have been filed subsequent to the final rejection, dated January 23, 2006.

V. Summary of claimed subject matter

The invention of independent claim 1 relates to a method for a user of a measurement process to cause a variation in the measurement process and software to control a measurement. The measurement process comprises a sequence of operations controlled by a computer program containing a variation point at which a function call instruction is inserted by a designer of the computer program to pass control to a user-defined variation function. The function call instruction passes control to the user-defined variation function when the variation point in the computer program is reached and the user is prevented from modifying the measurement process other than through the user-defined variation function. In this way, the designer may ensure that the measurement process is not invalidated by user modifications. Further, the details of the measurement process may be hidden from the user.

The invention of independent claim 21 relates to a computer readable medium containing a program of computer instructions for controlling a measurement process. A

first group of instructions, generated by a designer of the program, initiate the measurement process, and a second group of instructions, also generated by the designer, control the measurement process. This second group of instructions includes a function call instruction at a variation point. The function call instruction passes control to a user-defined variation function generated by a user. The user-defined variation function is associated with the function call instruction prior to execution of the measurement process and the user-defined variation function operates to modify the measurement process and return control to the measurement process. In this way, the user is prevented from modifying the measurement process other than through the user-defined variation function.

VI. Grounds of rejection to be reviewed on appeal

Claims 1-4, 7-9, 14-29, 31-33 and 36-40 stand rejected under 35 USC §102(e) as being anticipated by U.S. Patent No. 6,907,557 to Perez et al. (incorporating U.S. Patent No. US 6,401,220 to Grey).

Claims 5, 6, 10-13, 34 and 35 stand rejected under 35 USC §103(a) as being unpatentable over Perez in view of U.S. Patent Application Publication No. 2002/0026514 to Ellis at al.

VII. Argument

Rejection under 35 USC §102(e)

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for parent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English Language.

Claims 1-4, 7-9, 14-29, 31-33 and 36-40 have been rejected under 35 USC §102(e) as being anticipated by U.S. Patent No. 6,907,557 to Perez et al. (incorporating U.S. Patent No. US 6,401,220 to Grey).

Claim 1 relates to a method for a user of a measurement process to cause a variation in the measurement process. The measurement process comprises a sequence of

operations controlled by a computer program containing a variation point at which a function call instruction is inserted by a designer of the computer program to pass control to a user-defined variation function. The function call instruction passes control to the user-defined variation function when the variation point in the computer program is reached and the user is prevented from modifying the measurement process other than through the user-defined variation function.

Claim 21 relates to a computer readable medium containing a program of instructions which, when executed on a computer, control a measurement process. The instructions include a first plurality of instructions generated by a designer of the program of instructions and operable to initiate the measurement process, and a second plurality of instructions generated by the designer and operable to control the measurement process. The second plurality of instructions include a function call instruction at a variation point, the function call instruction being operable to pass control to a user-defined variation function generated by a user. The user-defined variation function is associated with the function call instruction prior to execution of the measurement process and the user-defined variation function operates to modify the measurement process and return control to the measurement process. Further, the user is prevented from modifying the measurement process other than through the user-defined variation function.

User is prevented from modifying the measurement process other than through the user-defined variation function.

In claims 1 and 21, the user is prevented from modifying the measurement process other than through the user-defined variation process. This aspect of the claims is not taught by Grey.

The Perez and Grey references disclose a software tool, the "TestStand", that allows a user to design and edit test sequences. The user is not prevented from modifying a test sequence created using the tool. This type of system is described on page 2, line 16, to page 3, line 9, of the specification for the present invention. In particular, the references describe systems in which the user is free to create a test procedure through definition of the sequence of steps, whereas the present invention provides for a user to *modify* a process without allowing the user to modify the original computer program. The process itself is determined by the designer of the computer program. Using variation points, the user may make variations to the process without the risk of invalidating the process itself. In contrast, in the systems of Perez and Grey, there are no constraints to prevent a user from defining an invalid process.

In the Grey reference it is the user who defines the measurement process through a test sequence. In particular, Grey describes the test executive as having a Sequence Editor specifically to allow the user to modify the test sequence (and thereby modify the measurement process). Rather than preventing the user from modifying the measurement process other than through user defined variation points, the test executive of Grey provides a sequence editor specifically to allow the user to modify the measurement process without restriction.

Claims 1 and 21 define two entities: a designer of the computer program and a user of the measurement process. The examiner, in the advisory action dated April 4, 2006, asserts that the 'user' in Grey lines 41-53 is equivalent to the designer of claims 1 and 21. Appellant submits that Grey and Perez only disclose one category of user. That category of user is not prevented from modifying (base) test sequences and is therefore not equivalent to the user of claims 1 and 21 (the user of the measurement process). Further, in claims 1 and 21, the function call (to a function not specified by the designer) is inserted by the designer while the variation function is provided by the user. Neither Grey nor Perez disclose two categories of users, one that inserts function calls at variation points and one that supplies the functions.

In the final office action, dated January 23, 2006, the examiner relies on Perez column 4, lines 52-65 to argue that the user is prevented from modifying the measurement process other than through the user-defined variation function. Perez column 4, lines 52-65 describes child test sequences derived from a base test sequence. However, Perez column 3, lines 16-25 describes how the base test sequence is manually created by the user. It is clear, therefore, that the user is not prevented from modifying the base sequence. Further, column 3, lines 38-51, describes how the user can manually edit the child test sequences. Therefore, the user is not prevented from modifying the child test sequence. Appellant submits that the Perez reference does not disclose the inventions of claim 1 and claim 21, since it does not disclose that the user is prevented from modifying the computer program that controls the measurement process (i.e. the test sequence or child test sequence).

The examiner, in the advisory action dated April 4, 2006, asserts that Perez discloses an embodiment wherein the user is prevented from modifying the child test sequences. A child test sequence is a variation of a base test sequence (see, for example, Perez figure 3). However, Perez does not disclose that the user is prevented from modifying the base test sequence. Instead, he provides a mechanism to allow

modifications to the base test sequence to propagate through to the child sequences. Perez is concerned with, for example, simplifying the task of generating test sequences for related products or devices (column 2, lines 48-63). The tests may, as in Perez's example, use the same data acquisition board. The base sequence may contain steps for controlling the data acquisition board, which are common to all tests. The child test sequences may all use this common control sequence. Indeed, it may be beneficial for the user to be prevented from modifying these steps in a child test sequence. These steps may be 'locked', although Perez does not disclose a mechanism for this locking. However, if the data acquisition board is changed, the user is not prevented from modifying the base test sequence to alter the steps that control the data acquisition board. It is advantageous that the changes should propagate to all of the 'associated' child test sequences. Perez achieves this by generating the child sequences automatically from the base sequence using metadata. Thus, the child sequences are 'locked' to or 'associated with' the base sequence (they inherit some of its properties), but the user is not prevented from modifying the base sequence. Further, since modifications to the base test sequence propagate to the child test sequences, the user can modify the child sequences by modifying the base test sequence. This is in contrast to claims 1 and 21. In claims 1 and 21, the user is prevented from modifying the (base) measurement process other than through the user-defined variation function.

<u>Computer program contains a variation point inserted by designer.</u>

In claims 1 and 21, a variation point is described as a point (in a computer program) at which a function call is inserted by a designer of the computer program to pass control to a user-defined variation function. Neither the Grey reference (US 6,401,220) nor Perez reference (US 6,907,557) disclose a variation point. Grey (column 13, lines 50-58 and column 14, lines 52-61) describe the use of function calls, but these function calls are inserted by the user and relate to user-defined functions. Even if one where to consider the 'TestStand' as a tool for a designer, Grey would only disclose a function call inserted by the designer that relates to designer-defined functions. The function calls disclosed by Grey define the test process itself, not a variation to the test process. Specifically, Grey states "TestStand must also know the list of parameters that the code module requires" (column 13, lines 57-58). In contrast, the designer of claims 1 and 21 may not know in advance what variation the user will want to make. In the system disclosed by Grey, a user may make a variation to a test process by simply inserting a new function call (or equivalent in-line code). In the claims 1 and 21, the user

is prevented from inserting function calls. To make a variation to the process the user defines variation functions that are associated with pre-existing function calls in the computer program that were inserted by the designer.

Claims 1 and 21 call for the computer program that controls the measurement process to contain one or more variation points inserted by a designer (not the user). The examiner refers to Grey et al. column 12, lines 41-53. Here Grey describes how sequences contain steps that can call external code modules. As discussed above, the sequences themselves are specified by the user, not by the designer (as called for in claims 1 and 21), so any calls to external code modules are inserted by the user. Further, this is contrary to other remarks by the examiner that identified the test executive (column 2, lines 55-60) as being equivalent to the computer program of claims 1 and 21. Grey does not disclose that the external code modules and the sequence steps that call them are created by two different entities. Further, Grey does not disclose that any entity is prevented from modifying the computer program that controls the test process. Still further, Grey does not disclose the element of associating the function call instruction with the user-defined variation function prior to execution of the measurement process. The examiner refers to Grey column 13, lines 50-58, which discloses invoking a function specified in the test sequence, rather than associating a function. The examiner also refers to column 14, line 52, to column 15, line 9. Here, Grey describes how a user of the TestStand editor can insert a function call (or expression) into a test sequence. Insertion of a function call is a modification of the test sequence by the user. This is contrary to claims 1 and 21, in which the user is prevented from modifying the computer program – the process can only be changed by the user defining a variation function. The variation point, at which the variation function is called, is already inserted by the designer at a specific point in the computer program. The variation point does not specify which function is to be invoked and the user cannot insert or remove the function call at the variation point. The user can only define a variation function and select the variation point at which it will be called (by associating it with that variation point).

<u>Test executive software of Grey is not equivalent to the computer program of claim 1 or the program of instructions of claim 21.</u>

With regard to claims 1 and 21, the examiner has opined that the test executive software of Grey column 11, lines 41-56 and column 12, lines 6-15 is equivalent to a computer program of claim 1. However, Grey column 2, lines 11-13 describes the test executive as 'a module or set of modules that provide an API for creating, editing,

executing and debugging sequences'. See also column 1, lines 35-48. In the Grey reference it is the Test Sequence (defined in an associated Sequence File) that controls the series of steps in a test (see column 1, lines 62-64, column 2, lines 1-2, and column 4, lines 47-48, for example). In particular, column 1, lines 62-64, defines the sequences as 'a series of steps that the user specifies for execution in a particular order' (emphasis added). Thus, it is the test sequence that controls the measurement process.

Further, in claims 1 and 21, the call instruction at the variation point is inserted by the designer. In Grey (and Perez), the test sequence is the computer program that controls the measurement process, and the test sequence is created by the user. The test executive is part of the architecture through which the test sequence exerts its control.

Regarding claim 21, the examiner refers to Grey column 11, lines 41-56, which describes a memory for storing the test executive software. However, lines 50-56 describe how the test executive software allows the user to create, configure and/or control test sequence execution. However, it does not disclose that the test sequences are stored in the memory.

In claim 2, the process modification software module includes an interface servicing element that services an interface realized by the measurement process. The examiner refers to Grey column 13, lines 7-30, which describes interfaces between the TestStand executive and the user. As argued above, the TestStand executive does not control a measurement process, rather it is a means to create a test sequence that controls a measurement process. Therefore, the TestStand executive is not equivalent to the computer program of claim 2. Further, claim 2 calls for the process modification software module to include an interface servicing element. In Grey column 13, lines 7-30 the interfaces are serviced by the user, not by a process modification software module.

In claim 31, the variation function is accessed via an interface. In contrast, Grey column 13, lines 7-30 describes how user input to the TestStand executive is accessed via an interface with the user.

Claims 3, 4, 7, 32-33 and 36 further define the type of interface used and how it is specified. Again, the examiner references Grey column 13, lines 7-30, which describe interfaces between the user and the TestStand executive, rather than interfaces between the computer program and the process modification software module.

Claims 8 and 37 further define the process modification software module. As argued above, the functions disclosed by Grey are not equivalent to the process

modification software module of claims 1 and 21, from which claims 8 and 37 depend, respectively. A process modification software module is a user-defined software module that services a function call inserted into the computer program by a designer. The user is prevented from inserting function calls, since this would modify the process.

Claim 9 defines how the process modification software module and the measurement process are executed in the shared or separate memory. As argued above, the functions disclosed by Grey are not equivalent to the process modification software module of claim 1, from which claim 9 depends.

Claims 14-18 depend from claim 1 and claims 22-28 depend from claim 21. These claims define the types of variations that can be made.

Claims 19-20 depend from claim 1 and claim 38 depends from claim 21 and relate to a use of multiple variation points. Grey does not disclose variation points inserted by a designer at which calls to user-defined variation functions are made. Grey column 13, lines 16-25 describes a run-time operator interface used to start, stop and step execution of a one or sequences. A variation point is point at which a function call is inserted by a designer. In contrast, a break-point, or stop-point, in the execution is point chosen by the user. Grey does not disclose that variation functions are called at stop points.

With regard to claim 29, the examiner refers to Grey column 12, lines 41-47. This does not disclose that the function calls inserted by a designer invoke interfaces with user-defined variation functions. Rather, it just describes how sequences and sub-sequences (routines and subroutines) can communicate via interfaces.

With regard to claim 39, the examiner appears to suggest that a variation point is equivalent to a user prompt. However, claim 21, from which claim 39 depends, defines a variation point to be a point within a program of instructions at which the designer has placed a function call instruction to pass control to user-defined variation function. This is not equivalent to a user prompt, which passes control to the user. Further, claim 21 calls for the function call to be associated with the variation function prior to execution of the measurement process. In contrast, user input is provided during execution. Thus, even if user input were used to select a function to be executed, this association would not occur prior to execution of the measurement process.

Claim 40 is a system claim that depends from independent claim 21.

In summary, the Examiner failed to demonstrate that the cited references, whether considered separately or as a whole, disclose the claimed invention. Accordingly, this

application is believed to be in proper form for allowance and a speedy notice of allowance is respectfully requested.

Rejection under 35 USC §103(a)

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to one of ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 6, 10-13, 34 and 35 have been rejected under 35 USC §103(a) as being unpatentable over Perez in view of U.S. Patent Application Publication No. 2002/0026514 to Ellis at al.

The Ellis reference discloses a method for facilitating inter-process communication across different platforms and software environments using a multiplicity of object-oriented inter-process communication protocols to the manufacturing equipment. Process control and monitoring is mediated through a set of software methods that may be invoked to implement or monitor processes. The method is concerned with providing communications across different platforms to facilitate centralized control and monitoring. The Ellis reference is concerned with starting and stopping software methods, whereas the present invention is concerned with causing variations to methods. The Simple Object Access Protocol and Common Object Request Broker Architecture, referred to in claims 5 and 6 and claims 34 and 35, were designed specifically for providing communications between software objects or components.

Claims 5 and 6 depend from claim 1 and claims 34 and 35 depend from claim 21. Claims 1 and 21 call for the computer program to contain a variation point at which a function call instruction is inserted by a designer of the computer program to pass control to a user-defined variation function. Further, the user is prevented from modifying the measurement process other than through the user-defined variation function. As described above, claims 1 and 21 define two entities: a designer of the computer program and a user of the measurement process. Appellant submits that Grey and Perez only disclose one category of user. That category of user is not prevented from modifying (base) test sequences and is therefore not equivalent to the user of claims 1 and 21 (the user of the measurement process). Further, in claims 1 and 21, the function call (to an

unspecified function) is inserted by the designer while the variation function is provided by the user. Neither Grey nor Perez disclose two categories of users, one that inserts function calls at variation points and one that supplies the functions.

This defect is not cured by the Ellis reference. Thus even if one were to combine the Perez reference with the Ellis reference, the result would not be the claimed invention of claims 1 and 21 or their dependent claims 5, 6, 34 and 35.

In summary, the Examiner failed to demonstrate that the cited references, whether considered separately or as a whole, anticipate or make obvious the claimed invention. Accordingly, this application is believed to be in proper form for allowance and a speedy notice of allowance is respectfully requested.

Respectfully submitted,

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VIII. Claims appendix

1. A method for a user of a measurement process to cause a variation in the measurement process, the measurement process comprising a sequence of operations controlled by a computer program containing a variation point at which a function call instruction is inserted by a designer of the computer program to pass control to a user-defined variation function, said method comprising:

determining the variation to the measurement process;

providing a user-generated process modification software module comprising the user-defined variation function for causing the variation; and

associating the function call instruction with the user-defined variation function prior to execution of the measurement process,

wherein the function call instruction passes control to the user-defined variation function when the variation point in the computer program is reached_and wherein the user is prevented from modifying the measurement process other than through the user-defined variation function.

2. A method as in claim 1, wherein the process modification software module further comprises an interface servicing element that services an interface realized by the measurement process.

3. A method as in claim 2, wherein said interface operates in accordance with a predetermined protocol.

4. A method as in claim 3, wherein said predetermined protocol is specified at a binary level.

5. A method as in claim 3, wherein said predetermined protocol is a Simple Object Access Protocol.

6. A method as in claim 3, wherein said predetermined protocol is a Common Object Request Broker Architecture.

7. A method as in claim 2, wherein said interface is determined by the user and is passed into said measurement process.

8. A method as in claim 1, wherein said process modification software module is one of a Component Object Module, a computer program conforming to a software component specification for distributed applications, and a Dynamically Linked Library.

9. A method as in claim 1, wherein the measurement process and the process modification software module are executed in a shared computer memory space.

10. A method as in claim 1, wherein said measurement process is executed in a first memory space of a first computer and said process modification software module is executed in a second memory space which is distinct from the first memory space.

11. A method as in claim 10, wherein the second memory space is located within a second computer.

12. A method as in claim 11, wherein the second computer is remote from the first computer.

13. A method as in claim 12, wherein the first computer and the second computer communicate via a network.

14. A method as in claim 1, wherein said variation comprises modification of data.

15. A method as in claim 1, wherein said variation comprises modification of one or more numerical parameters of the measurement process.

16. A method as in claim 1, wherein said variation comprises modification of one or more control parameters of the measurement process, wherein one or more alternatives within the measurement process may be selected.

17. A method as in claim 1, wherein said measurement process is applied to a device under test and said variation comprises alteration of a configuration of the device under test.

18. A method as in claim 1, wherein said measurement process is applied to a device under test and said variation comprises causing input signals to be supplied to the device under test.

19. A method as in claim 1, wherein said computer program contains a plurality of variation points and said process modification software module comprises a plurality of user-defined functions and wherein each of the plurality of variation points is associated with one of the plurality of user-defined functions.

20. A method as in claim 1, wherein said computer program contains a plurality of variation points and a plurality of process modification software modules are provided, each of the plurality of process modification software modules comprising at least one user-defined variation function and wherein each of the plurality of variation points is associated with one of the at least one user-defined variation functions.

21. A computer readable medium containing a program of instructions which, when executed on a computer, control a measurement process, said instructions comprising:

a first plurality of instructions generated by a designer of the program of instructions and operable to initiate the measurement process; and

a second plurality of instructions generated by the designer and operable to control the measurement process, the second plurality of instructions including a function call instruction at a variation point, the function call instruction being operable to pass control to a user-defined variation function generated by a user;

wherein the user-defined variation function is associated with the function call instruction prior to execution of the measurement process and wherein the user-defined variation function operates to modify the measurement process and return control to the measurement process and wherein the user is prevented from modifying the measurement process other than through the user-defined variation function.

22. A computer readable medium as in claim 21, wherein the function call instruction is operable to pass parameters to the variation function.

23. A computer readable medium as in claim 22, wherein the parameters comprise measurement data.

24. A computer readable medium as in claim 21, wherein the function call instruction is operable to receive parameters from the variation function.

25. A computer readable medium as in claim 24, wherein the parameters comprise control parameters, operable to select between a plurality of alternative instructions controlling the measurement process.

26. A computer readable medium as in claim 24, wherein the parameters comprise numerical parameters, operable to modify the measurement process.

27. A computer readable medium as in claim 24, wherein said measurement process is applied to a device under test and wherein the parameters comprise control codes, operable to cause signals to be supplied to the device under test.

28. A computer readable medium as in claim 24, wherein said measurement process is applied to a device under test and wherein the parameters comprise control codes, operable to alter the configuration of the device under test.

29. A computer readable medium as in claim 21, wherein the function call instruction invokes an interface.

31. A computer readable medium as in claim 21, wherein the variation function provided by the user of the measurement process is accessed via an interface.

32. A computer readable medium as in claim 31, wherein said interface operates according to a predetermined protocol.

33. A computer readable medium as in claim 32, wherein said predetermined protocol is specified at a binary level.

34. A computer readable medium as in claim 33, wherein said predetermined protocol is a Simple Object Access Protocol.

35. A computer readable medium as in claim 33, wherein said predetermined protocol is a Common Object Request Broker Architecture.

36. A computer readable medium as in claim 31, wherein said interface is determined by the user and wherein said instructions further comprise instructions to identify the interface.

37. A method as in claim 21, wherein said variation function is implement as one of a Component Object Module, a computer program conforming to a software component specification for distributed applications, and a Dynamically Linked Library.

38. A computer readable medium as in claim 21, wherein the second plurality of instructions includes a plurality of function call instructions passing control to a plurality of user-generated variation functions.

39. A computer readable medium as in claim 21, wherein said function call instruction is placed within said second_plurality of instructions at a variation point where the designer of the program of instructions anticipates a user may want to interact with or modify the measurement process.

40. A measurement system comprising:

a computer readable medium in accordance with claim 21; and

a physical interface operable to supply signals to a device under test and receive signals from a device under test.

IX. Evidence appendix

None

X. Related proceedings appendix

None